Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

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(*See inside back cover for details*)

AUGUST
1936

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Housewives who own Westinghouse Washers just laugh at the old saying, "a woman's work is never done." They simply put their clothes in a big handsome Westinghouse De luxe Washer and let *it* do the work. No more red hands, scraped knuckles, tired backs, burning feet and long-drawn-out washdays for *them*.

This new washer gently rubs the clothes across the corrugations of the smooth porcelain-enameled tub and douses them back and forth through rich suds. Gets overalls, roller towels, work shirts spotlessly clean. Won't harm the sheerest curtains.

Nine pounds capacity, the safest wringer ever built, Handy Feeder, automatic reversible drain, greater sturdiness — these are some of the Westinghouse features that give you more for your money.

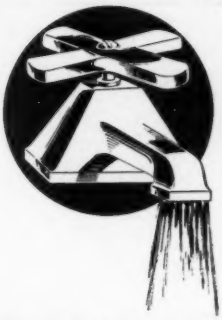
When you come to town look over the entire Westinghouse line. There's sure to be a model just built for you. A free demonstration will prove it before you buy.

EVERY HOUSE NEEDS WESTINGHOUSE

WESTINGHOUSE GOLDEN JUBILEE

Westinghouse *Washers*

Can you afford to pioneer



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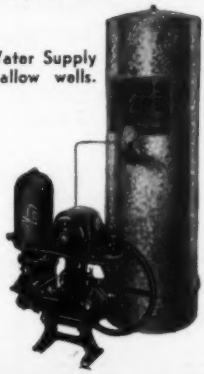
The average cow drinks 1,000 gallons of water a month—12,000 gallons a year. To pump that water by hand means four ten-hour days spent on the business end of a pump handle. Can you afford to pioneer, to waste time and energy in laborious hand pumping, when a Goulds CID Water Supply System will do it for two cents an hour or less?

Water in abundance, available when and where you want it at the turn of a faucet increases yields from garden and field, means more and better milk and eggs, fattens cattle and hogs for market in less time. In the home, running water makes possible a modern bathroom, kitchen and laundry—brings your family better health and added comfort.

There is a Goulds CID Water Supply System available for use with deep and shallow wells in sizes to meet every capacity requirement. Completely automatic operation, assures an unfailing supply of water. Efficient design keeps operating costs at a minimum. Fine materials in every part and honest workmanship eliminate adjustments and repairs . . . yet prices are surprisingly low. Send the coupon for complete information.

Goulds CID Water Supply System for deep wells.



Goulds CID Water Supply System for shallow wells.

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6372

August, 1936

Electricity on the Farm

Vol. 9, No. 8

EDITORIAL

HOME CONVENIENCES IN THE BARN

Of all the conveniences brought to the cow barn by electricity, the greatest is an unlimited supply of cool, pure water.

Electric lights, power ventilation, fly control, electric water heating and electric milking are all profitable uses of current, but a water supply stands first.

Consumption of increased quantities of water by the cows means increased milk supply. The liberal use of water for cleansing stalls, floors and gutters improves sanitation. The same may be said with regard to milking utensils, and even to the cows themselves.

In hot weather, as well as cold, the delivery of well water to drinking cups placed in front of each cow encourages the drinking of water and improves the digestion of food.

In the arrangements of the modern barn careful attention to the water supply system represents time profitably spent, for it means increased profits from the dairy herd.

A typical example of a well designed barn water system is described elsewhere in this issue in an article by Andrew Appleby. It is well worth reading, for it illustrates clearly the essentials of such a system.

FRED SHEPPERD.

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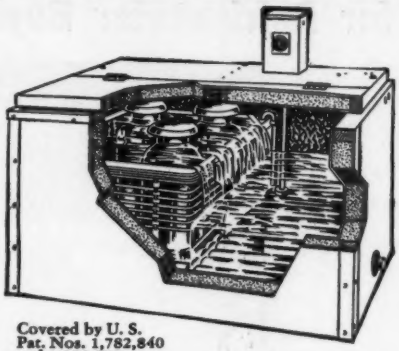
ESCO "NI-AG-RA"

Cools Milk to the Very Top



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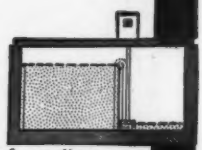
ICY COLD WATER is always up on the necks of the cans — the ESCO "NI-AG-RA" is the *only* milk cooler that maintains a constant water level — above the milk level in the can — whether you have only one can in the Cooler or it is filled to capacity. ALL the MILK in EVERY CAN is cooled to 50 degrees (and lower) in one hour or less.

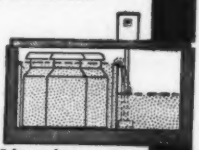
See in the illustrations how the exclusive patented Automatic High Water Leveler works. See why it is the only milk cooler that cools all of the milk in every can night and morning to a uniform temperature.

Write today — get FREE BOOKLET describing in detail the 24 special features of the New ESCO "NI-AG-RA."



Model "A-6" ESCO "NI-AG-RA" ready to receive milk for cooling.

...Even with only 1 can in place the icy cold water is up on the neck.



Here we see the 3 cans of night milk... All are in "up to their chins" and will be cooled to below 50° in an hour.

With the 3 morning cans added (6 in all) the water level is correct and all will be properly cooled in 1 hour.

REMEMBER IT IS THE ONLY MILK COOLER THAT COOLS ALL THE MILK IN EVERY CAN.

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The New ESCO "NI-AG-RA" Milk Coolers range from 2 to 21 can capacity.

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The Simplest Refrigerating Mechanism Ever Built
It Cuts Current Cost to the Bone
The new Frigidaire cold-making unit gives more cold for less current cost. Only three moving parts, permanently oiled, sealed against moisture and dirt. Quiet, unseen, trouble-free.
Current Cost
FRIGIDAIRE

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Please send me your beautifully illustrated 32-page booklet describing in detail the new Frigidaire with the "Meter-Miser."

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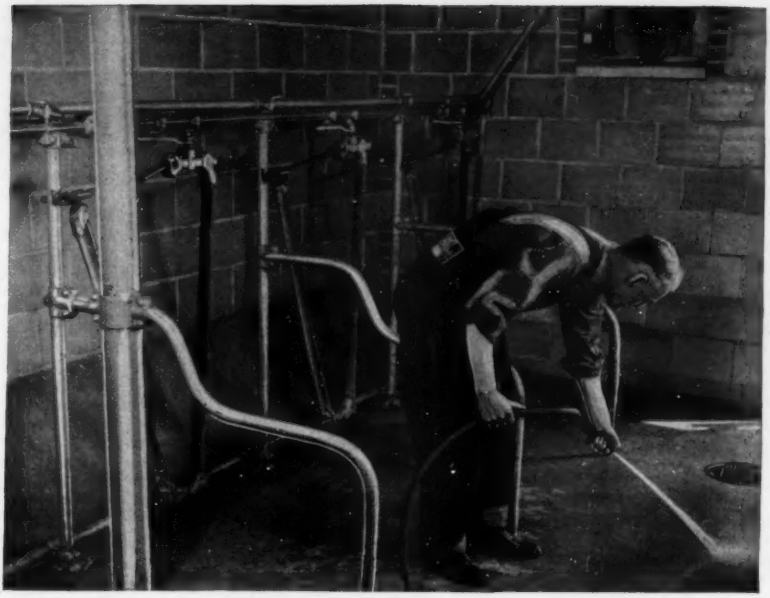


Water piped to the Gil-Bar milking room keeps it spotless.

FOLKS GET WATER from FAUCETS

By ANDREW APPLEBY

MY wife stood in the central feed alley of the big Gil-Bar dairy barn talking with 5-year-old Peggy Barlass and watching the long lines of registered Jerseys sip water from their automatic bowls.

"Look, Mrs. Appleby," the childish voice called. "You push this down and the water comes in. The cows can do it themselves whenever they want a drink."

My wife expressed proper interest, and polite wonder at the skill of the cows.

"Folks don't drink like that, do they? continued Peggy, "not out of bowls. Folks get their water from faucets."

As Peggy's father and I passed on out of hearing, we smiled at her calm acceptance of this luxury as an ordinary condition of every day existence. For her that has always been true. During her short life, no one at Gil-Bar Farm has ever had to pump or carry water. Whenever they wanted it about the farm buildings, they could get it from a faucet. For besides having a good well with a motor driven pump in it, this farm has a convenient system of pipes to carry the water to the places where it is needed. Yes, and a sewage disposal system to carry it away again.

Gil-Bar Farm has had running water for many years, but the re-arrangement of yards and buildings and the development of a retail dairy business have required some changes in the piping system. The accompanying plan shows a simple, complete and handy layout to fit the farm's modern needs.

Of course, it all begins at the well which is

Fine Jerseys soon repay the cost of automatic drinking cups.

A few dollars worth of pipe saves years of water carrying.

located close to the buildings, but out of danger of seepage from the barns and yards. The well itself is not better or essentially different from that on thousands of farms. But it is equipped with a deep-well pump and a ¾ H.P. electric motor.

"We use a lot of water around here," said Mr. Barlass. "But that little motor supplies all we need. Besides the tank in the yard, there are automatic drinking cups for sixty cows, the herd bulls, and all the pens in the calf barn. Then there's all the washing and rinsing in the dairy room, and a complete bathroom in the men's dormitory upstairs. And you know there are two families of us in the house."

With room enough and to spare, I thought, looking up at the stately seventeen room farm house built of old-fashioned cream colored brick.

"From this pump," Mr. Barlass went on, "the water goes as directly as possible to a 500 gallon pressure tank in the basement of the house. There's also a water softener and a water heater in the basement to provide the soft water and the hot water we need in the kitchen, the laundry, a complete bathroom upstairs, and a lavatory and toilet on the ground floor."

As the diagram shows, a branch from this main pipe runs to the cow barn. In one corner of the barn there is a milking room—just a plain, unpretentious tile-walled room with stanchions for six cows. Such a room as any farmer could partition off from the rest of his barn. But there is a faucet with a hose attached and there is a drain in the concrete floor. Here they milk three cows at a time while three more are being cleaned up and got ready. And with the hose they sluice the floor as often as necessary to keep the place immaculate. In fact the whole barn is washed at frequent intervals.

The pipe that supplies the hose faucets can be connected to the drinking cups if necessary. However, they have another source of supply that will be explained in a moment.

Another line runs to the calf barn with a branch to the dairy house and the men's dormitory on the second floor.

That is all there is to the pressure piping system for a big and busy dairy farm. There are no

Looking into a good thing! A frost-proof pump pit. The heart but not the arteries of a labor saving system.

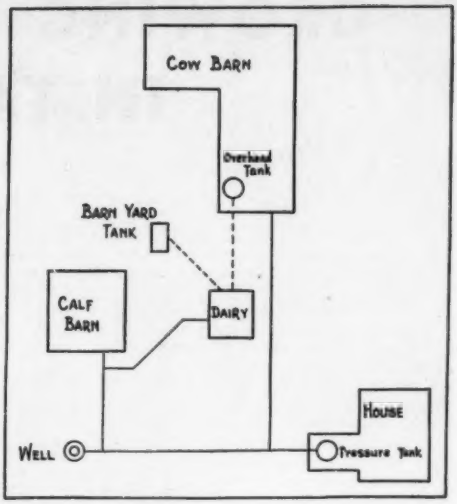
gadgets or complications. It is completely automatic, yet perfectly simple. With inch and inch and a quarter pipes laid below frost it should require no attention for years. The one tank furnishes the pressure and the cushion for the whole system, yet much of the water is delivered direct from the well, and nobody has to carry any.

Solved Waste Water Problem

"Waste water used to give us trouble," Mr. Barlass confessed. "You see we produce about 550 quarts of milk a day and cool it as soon as possible over an aerator, running cold water through the top section. All that clean, cold water just flooded our septic tank and dry wells. So now we have run one pipe from the milk cooler to the open stock tank in the barn yard, and another to a 20-barrel gravity tank in the hay loft of the dairy barn. This is connected to the water bowls. Instead of wasting all that water we now use every bit of it as drinking water for the cows. If there isn't enough, we can always turn on the pressure supply.

"We think it good insurance, too. In case of fire from lightning that might cripple our pump motor, 20 barrels of water under even a little gravity pressure could be a wonderful help. Using it twice saves a little on the pumping, of course, but the important thing is that it solves the problem of getting rid of it."

For the disposal of house sewage, Gil-Bar Farm uses an ordinary two chamber septic tank. For the dairy the problem is a little different. Most of that waste is from washing milking machines, cans, pails, and six or seven hundred bottles a day. It is mainly just water with a little milk and washing powder in it. It drains into a series of three deep pits or dry wells and any overflow from them goes off into the fields underground through lines of drain tile.

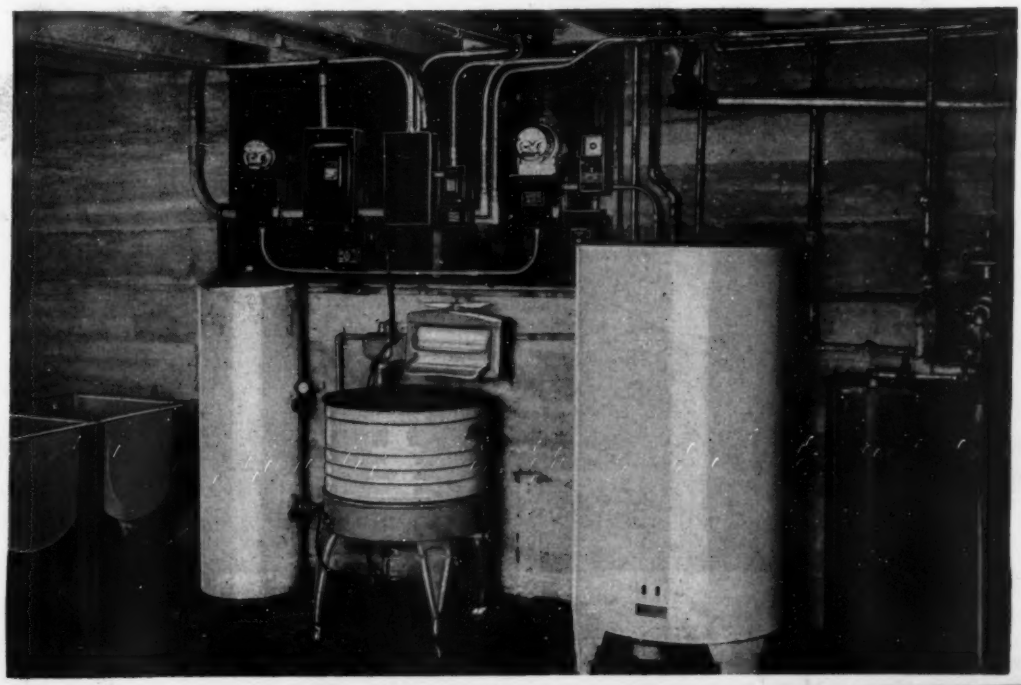


A simple piping system to serve Gil-Bar Farm. Dotted lines show where water goes from milk cooler.

"And now what about these faucets on the outside of the buildings?" I finally asked.

"Oh, we use them for watering the garden, washing the car, filling the tractor, sprinkling the lawn, and hope we'll never have to use them for fire," Mr. Barlass concluded with a merry twinkle in his eye.

On this farm, at least, little Peggy is right. Folks do get water from faucets for all their needs.



Modern water works in a farm home basement. Pressure tank. Electric water heater. Water softener.

GROWING TOMATOES IN TANKS

By F. H. ALLEN

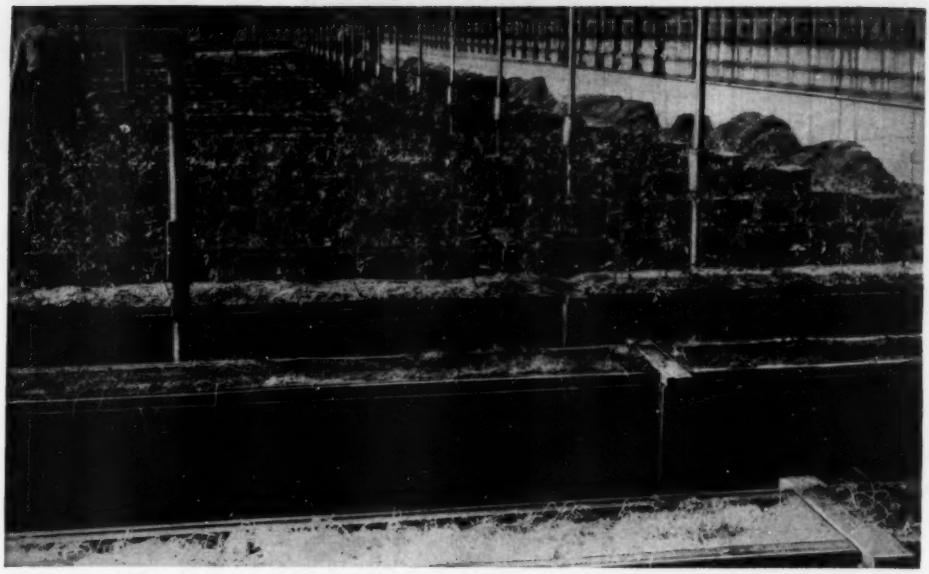
TUCKED away off the beaten path at Montebello, amazing experiments now being conducted by the University of California are proving that tomato plants can be grown IN WATER, without the aid of soil.

The Montebello station, where these tomatoes are being grown with astounding results, consists of a huge greenhouse in which the temperature ranges from 50 to 110 degrees Fahrenheit. Here are 116 rows of waterproofed wooden tanks, each measuring 12 inches wide and 32 feet long. Each tank contains electric heating elements which keep the water at a temperature between 80 and 90 degrees Fahrenheit, thermostatically controlled. A shallow tray with a chicken wire bottom fits into the top of each tank. This tray is filled with ordinary excelsior covered with a layer of rice hulls. This provides a firm base in which the young tomato plants are set, and from which the young roots travel down into the warm water. Periodically, a balanced plant food, compounded from ordinary chemicals, is added to the water and provides the growing plants with the necessary food to promote their uniform growth.

Plants Produce for Twelve Months

The plants grow rapidly and soon begin to form fruit. The tomatoes appear in bunches like grapes, all of uniform size and perfect textures, as many as fifteen perfect tomatoes in one group. As the vines continue to grow, they are trained to climb on strings suspended from wires stretched across the greenhouse. Every few days they put forth a new "whirl" of leaves, blooms, and then

Below: Frame with excelsior placed in tank. **Insert:** Plants more than six feet tall, two months of age, carrying six whirls of bloom and fruit. Ripe fruit on bottom whirl.



fruit until they reach the roof. Then they are trained to grow back to the ground again. Four months after planting, it was necessary to use a step ladder to reach the highest whirl of fruit. Such plants have continued to produce profitably for twelve months.

What advantage has this type of tomato culture over the field methods? First and most important, the crop is not seasonal since it produces continuously for at least a year from one planting. And it produces uniform, evenly textured tomatoes which means no culls,—no losses for the grower. Then, since there is no soil, there is no furrowing, weeding, irrigation, and other similar labor costs. And there is no spraying, since the plants are free from insects, worms and other infestation. And finally, weather conditions are always under control, and fruit matures uniformly, regardless of rain, frost or sun burn. It seems that tomatoes turn red without sunshine, the fruit deriving both nourishment and color from its watery, chemically treated bed, for tomatoes hidden under heavy foliage ripen as quickly and evenly as those exposed to the light.

Crop Yield Per Acre Astounding

A good crop of field grown tomatoes will produce three tons per acre, while under this new system, the crop will average two hundred tons per acre.

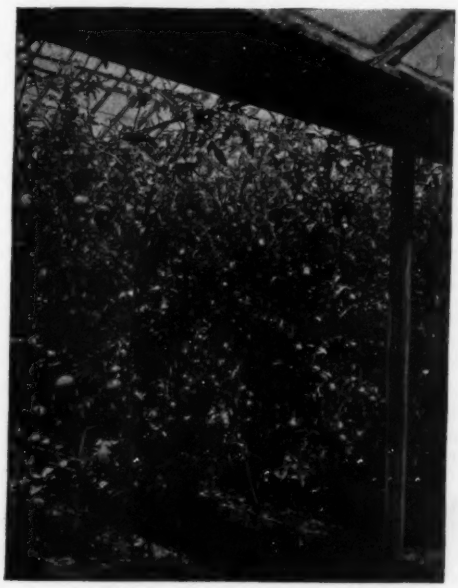
The cost of electric current for this method of culture is comparatively low considering the increase in the crop. Ripe tomatoes were picked within sixty days after planting, at which time each plant contained five whirls.

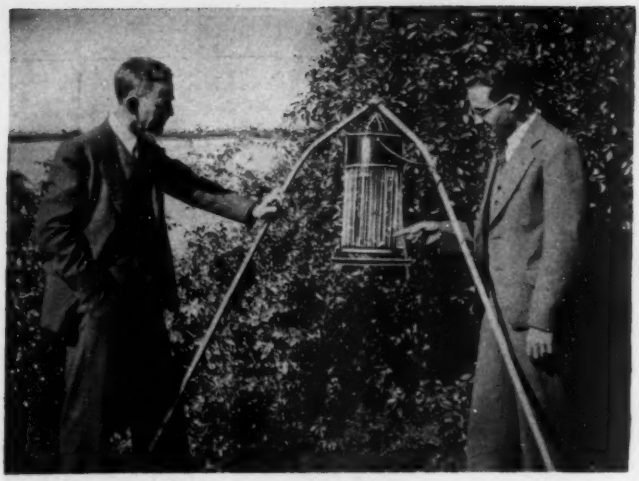
While the English forcing variety of tomatoes was used at the Montebello plant, other types have been found to be well adapted for this type of culture.

Similar experiments are being carried out with other crops and to date white potatoes are showing equally profitable results. Tobacco is another crop which responds abundantly to this method of production.

It is the claim of the scientists that with this intensive system of food production, 15% of the present land under cultivation would be sufficient to produce all of the food necessary for the human race.

Above: Tomatoes planted in excelsior frame.
Below: Same plants four and one-half months of age, better than eighteen feet tall, producing tons and tons of ripe luscious tomatoes.





Left: Dr. W. B. Herms and Joe K. Ellsworth with an insect electrocutor.

Below: Insect electrocutor with white mazda light as used in the home or garden.

DEATH TO INSECTS

By JOE K. ELLSWORTH*

THE use of light to attract insects has been known for years. As early as 1787, Roberjot, a parish priest in France, systematically caught vine moths by means of lighted candles placed on window sills of his house and wood fires in the vineyard. Later, kerosene lamps, acetylene torches and, of late, incandescent lamps have been used, but this practice has never received the approval of entomologists, probably because of the disadvantage of capturing, in addition to the harmful insects sought, others either beneficial or harmless. White light was also shown to draw a larger percentage of males than females, and of the females, a large percentage had spent their eggs.

We have found in our laboratory experiments that there is a difference in the effect of various colored lights. For example, certain insects if given a choice of color will respond to blue, while others respond to red, and still others are markedly attracted to the ultraviolet end of the spectrum. We have also found that the sexes react differently to the various colors. In the presence of the proper color of light, certain insects will leave their food and seek the light, similarly females soon after emergence will move toward lights of an appropriate color. Thus we have reached the conclusion that color exerts a selective influence, and by this means we are able to attract certain insects in a large enough proportion to effect control.

The California Experiment Station in cooperation with the State Committee on the Relation of Electricity to Agriculture is investigating these possibilities. Along with its study of the effect of colored light, it has developed a device to electrocute the insects that are attracted thereby.

Much of our early work has been with the grape leafhopper in California, but the results may be obtained in other sections, since the grape leafhopper

*Assistant in Entomology, University of California, Berkeley, California.

is present in all the grape areas of the United States. In the use of this method, it must be observed that temperature is a limiting factor, since below a temperature of 65° F. the leafhopper does not fly. There are certain areas where wind and low temperature occur in the early evening, as a result of which the leafhoppers cease to fly. It has been noted that when the temperature remains above 68° F. the leafhoppers fly throughout the night.

The results of the first year's test at Delano, in 1934, showed that a particular pale blue light of definite intensity had the greatest attraction for the grape leafhopper. Five vineyards were used for this trial. In one field all the lights were of one color, namely blue. In another field various colors, red, yellow, green, two other shades of blue and incandescent lamps, all of which were varied in intensity were run at the same time. The other three fields were used as checks, one of which received no control and the other two received the usual oil-pyrethrum and cyanogas treatments. The lighted field had one trap to the acre.

On July 11, 1934, the middle of the second brood, population counts were made. Taking the average of several stations in the field containing all blue light traps there was found on an average, 78 leafhoppers per vine, while in the check plot without control there were 1,280 leafhoppers per vine.

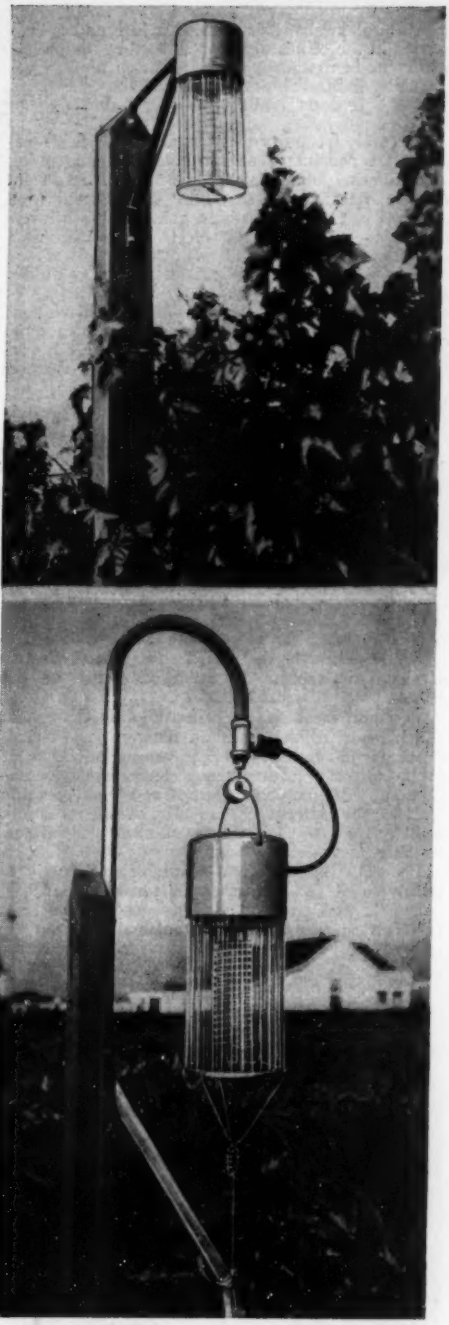
On March 30 and July 23, 1934, two sex ratio counts were made of the leafhoppers captured in the various traps. Of the insects attracted to the blue light, 88 per cent were females, while of those attracted to the red light only 7 per cent were females. To the 60-watt incandescent lamp, the same intensity as the blue and red lights mentioned above, there were 38 per cent females attracted. At this time, the normal field population of leafhoppers showed 30 per cent females.

We have reached the conclusion based on the field tests described above that a sufficient number of leafhoppers were removed daily by one trap to the acre in small plantings, so that the few remaining on the vines were of no consequence. Besides effecting a positive control of the vinehopper, the insect electrocutors proved of great value in the control of such secondary pests of vineyards as the sphinx moths; moths of the corn earworm, cutworm and armyworms; and the adults of the white grub.

The second year's experiments in 1935 were at Delano, Madera, Modesto, Escalon and Tracy. At Escalon the test showed a production of 63 tons of Thompson seedless grapes from the six acres. Of these, 58 tons were sold as "No. 1" for canning at a price of $16.00 per ton, which was $4.00 a ton more than any of the neighbors received. The sugar content of these grapes averaged 24 per cent.

Due to the high quality of the grapes from this field, the farmer received two blue ribbons (only two are given for this type of grape) at the San Joaquin County fair, one for the "plate grape" and the other for the "box grape." The cost of the installation (underground-Tellurium cable and labor) for this 6-acre vineyard using one trap to the acre, was $190.00. Maintenance cost $1.72 per acre for the season.

The insect electrocutors, eight inches in diameter and eighteen inches in height, consist of a wire cage of stainless steel, the alternate wires being connected through high tension porcelain insulation to the terminals of a transformer embedded in compound in its metal container, which supplies enough voltage to electrocute the insects as well as furnish sufficient current for the luminescent tube. This



Upper: Insect electrocutor with pale blue light to control grape grasshopper.
Lower: Insect electrocutor with midnight blue light is used in artichoke fields.

tube, spiral in shape, is used as a lure and is suspended in the center of the cage so that the insects will come in contact with the wires as they fly toward the light. These tubes are designed to burn 50,000 hours, or nightly for approximately ten years.

Insect electrocutors used in artichoke fields reduced the percentage of worminess by controlling the artichoke plume moth. This insect differs from the grape leafhopper in that it is attracted to a different color, midnight blue, and of a much lower intensity. When ten insect electrocutors were used in a ten acre experimental field, the worminess was reduced from the normal 30% to an average of 5%. By keeping the worminess below 5%. the artichoke can be packed as they come from the field without the extra process of handling for culling, since the law allows 5% worminess in the pack. A reduction in worminess not only increases the production of saleable artichokes, but also improves the quality. Because of the structure of this vegetable, the usual chemical sprays and dusts are prohibited, due to the inability to remove the poison.

While our experiments have shown the great advantage of colored light in insect control, there is still a definite place for white light in this work. It is necessary in cases where it is desirable to attract all species of insects at one time, such as in the home or garden, where they are a personal annoyance rather than an enemy to crops.

The use of traps with white light has been proved particularly effective in service stations, outdoor cafes or taverns, swimming pools, or any place where people gather at night under the usual form of artificial light. Such traps also are being used in California to attract and kill insects as food, that is, over chicken and turkey pens, frog and fish ponds.

California Uses Electricity on a Large Scale

By C. W. Geiger

IN the Mississippi Valley only 10 per cent of the farmers use electricity, even to light their homes. In fact, not more than 12 per cent of the 6,000,000 farms in the entire nation have electric service. So reports a special committee of the PWA.

Very different is the situation in California, which leads all the states in the number of electrical farms and in average consumption. Out in California a farm without electricity is an exception. In the Sacramento and San Joaquin Valleys, for instance, 90 per cent of the farm folk use electric current in their homes and also in their farming operations.

Probably the chief reason why electricity is so widely used by California farmers, orchardists, dairymen and poultrymen is because power lines of large capacity were constructed throughout the state to provide a dependable source of power for pumping water for irrigation. A vast majority of the farms in this state employ irrigation. Building lines to take care of this big pumping load also made electric service available to other farms along the lines. Largely because of the heavy demand for pumping underground water for irrigation, farmers in California use an average of 15,540 kilowatt hours a year. In other sections of the country the average is only 2,450 kilowatt hours, less than one-sixth as much.

Today electricity is the principal assistant of agriculture in California. Farmers and orchardists employ it to pump water for irrigation and domestic use, to operate all kinds of machinery, to dehydrate and process fruit and nuts, to provide refrigeration for storage of perishables, for soil heating, for destruction of insect pests, for lighting farm buildings and for dozens of other purposes.

A motor driven pump in the orchard of M. H. Susong in California means an abundant supply of water for irrigation purposes. In many localities irrigation now spells success for the crops of the farmers.

CLEANLINESS IS NEXT

By VERA B. MEACHAM

MY husband had an Aunt Patience who harassed her family unceasingly with that old copy book maxim: Cleanliness is next to godliness. She was always saying it, just as she was always scrubbing away somewhere in the house.

I've always laughed at his stories of Aunt Patience, but I more than half pity her, too.

"If that aunt of yours were alive to-day," I sometimes ask him, "what would she think of modern kitchens? With all her work she couldn't keep hers as clean as we do. I'd just like to have had her see an electric range. If cleanliness is next to godliness, there's a virtuous stove for you. Do you think a stove could be any cleaner?"

You might think that I expected an answer to that question, but I don't. There isn't any answer. My husband knows it couldn't, and anyway, as so often happens in family arguments, we'd both be arguing on the same side of the question, and that never gets you very far. I only mention it, because I want to tell you why cooking with electricity gives women such a lift toward keeping things clean.

My husband and I are both interested in that at our house. I may have to supply most of the elbow grease that goes into the job, but he has to pay for it all sometime. And cooking with current cuts down the time, and the effort, and the cost of keeping clean.

It has to. Just look at the range, first of all. What do you see? Just a smooth, acid resisting porcelain enamel surface, glazed like a china plate. Even the legs are enamel, or the cabinet that fits

(*Continued on page* 18)

A clean stove and clean fuel.

Upper Left: A Lao water carrier of Northern Siam. She is nine years old and a useful member of her family.

Upper center: An Irish maid drawing water from a well in the heart of Ireland.

Upper right: Water coolies at a village well in Korea. The well is, of course, a neighborhood institution.

Lower left: A village well in the Spree forest near Berlin. Here live the remainder of the Wends.

WATER, WATER, E

Left:
maide

Cente
systen

ER, EVERYWHERE

Left: The milk pails of Holland maidens also serve as water pails.

Center: Modern farm water supply systems carry water wherever it is desired, whether for home, cattle or irrigation.

Right: A native girl of the island of Bali carrying water for home use.

Lower right: Farm folk near Celo-Ferdinandoyo, Bulgaria, pause from their work in the fields to take a drink from a near-by spring.

Cleanliness Is Next

(*Continued from page* 15)

down tight to the floor. The oven, too, is lined with enamel, or aluminum, bright as a new kettle.

Where you would be expecting a fire box, there the three or four heating elements instead. On some stoves these are coils of wire strung in grooves in fireproof, circular brick. Sometimes these wires are backed by a block of insulating material. Other units are enclosed in a thin metal tube that protects them from damage and heats instantly. On one range the heating wires are sealed inside walls of stainless steel with no cracks or crevices to catch dirt. Both these units offer long life to the heating unit because they do seal the wires away from the air and prevent corrosion. Other units are rings of steel with the wires embedded below the surface. You can even find solid cast units that look like the lid of your old cook stove.

There just isn't anything about a stove like that to make dirt. If you spill a little food on one of the burners, it chars quickly, and you can brush it off with a soft brush. If you let an apple pie run over,—perish the thought,—the racks and the guides and the heating elements all come out of the oven as slick as a whistle, and you have just a bare walled box to wash.

If you have a mind that runs to figures, and if you have any doubt about the time it saves to cook on a clean electric range, just listen to the report of a study Miss Miriam Rapp, formerly of Purdue University, made a few years ago in the kitchens of 74 Indiana women. I've told you this before, but maybe you have forgotten it.

"The care and cleaning of cooking stoves requires an average time of 1 hour and 42 minutes a week. Homemakers cooking with electricity spent less than one-half hour per week in the care and cleaning of stoves. While homemakers cooking with coal and wood spent more than three hours a week in cleaning stoves, kindling fires,, carrying fuel and removing ashes."

It is possible to have this spotless cleanliness in your stove because its fuel, electricity, is the cleanest fuel in the world. You can see how that is if you think about it for a minute. You cook with the heat electricity makes by flowing through that coil of wire. There is no fire in the stove at all.

Miles away in some distant power house some one may be stoking a fire in the boilers that generate the electricity,—if, indeed, it does not come from the harnessed force of falling water,—but at any rate, there is no fire in the cook stove.

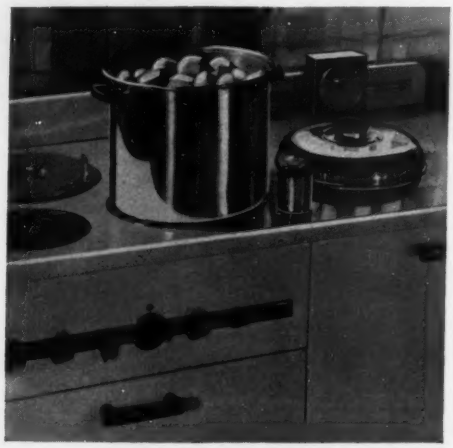
The fuel for electric heat is there whenever you turn it on. You don't have to store it, carry it in, nor feed it to the stove. It isn't consumed in giving you heat, so it doesn't give off any smoke or soot, or fumes. Nor does it leave any ashes behind for you to empty.

It is a tremendous advance to cook with heat as clean as the sunlight, to work over a stove that never shoots soot in your eye, nor back fires in your face.

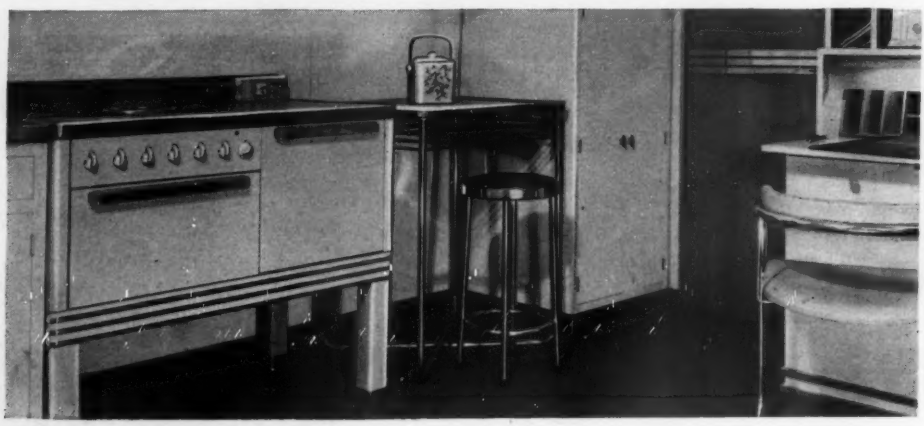
A clean stove and clean fuel make kitchens cleaner. They are bound to.

Floors, first of all, because there is no fuel to carry in nor any ashes to track out. Floors get dirty soon enough, anyway, but that much dirt stays out of the kitchen for good when you start cooking with an electric range.

The walls and the woodwork do not get streaked



The electric range means cleaner dishes and cleaner kitchens too.



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and grimy with greasy smoke from the stove. They can't, for there is no smoke and far less greasy fumes. The oven does not have a constant stream of air flowing through it as a flame burning oven must, a stream of grease laden air to smudge up paint and curtains.

With fuel burning stoves the kitchen always had to be cleaned oftener than the rest of the house, but it doesn't when you cook with current. There is no reason why its walls should get any dirtier than the others. There is no reason why its curtains should not stay crisp and fresh and clean as long as your other curtains do. There is no reason why the windows should fog up more quickly or need more frequent cleaning.

A clean stove and an invisible fuel that makes its only appearance as heat make a big difference in keeping the cooking dishes clean, too. When you cook with electric heat, the bottom of the kettle stays as clean and bright as the sides. You can wash it with the rest of the dishes and wipe it all over, inside and out on your best dish towel.

There can't be any sooty, grimy deposits on the bottom of the dish because it is never over a fire; it just sits on a clean, hot wire, or smooth enclosing metal.

Then, finally, and I sort of like this part, a clean electric range helps you to have, not only a cleaner kitchen, but a cleaner cook. You won't smudge up your hands working around the stove; you won't get grime under your finger nails cleaning it; you won't rub black off on your clothes, for there isn't any black to rub.

Taking it by and large, cooking on an electric range *is* a cleaner job,—and cleanliness, you know —is next to impossible on the stoves I used to use.

HOW COLD SHOULD MILK BE?

By JOHN E. NICHOLAS

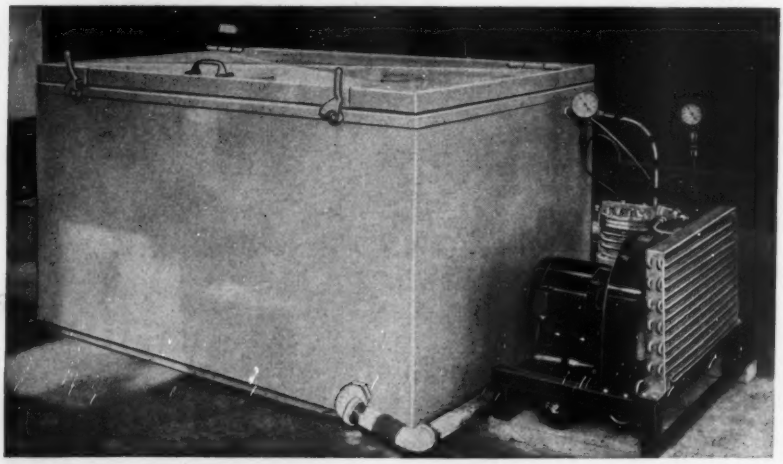
THE milk producer has frequently asked this question: "How cold should milk be?" or "To what temperature should I cool my milk?"—and the usual answer given is that milk should be cooled to 50 degrees or below 50 degrees F. The second logical question which might be asked, "How much below 50 degrees?" Surely 49.9 degrees F. is below 50.

Much could be argued about proper temperature and no definite answer might result, but we can always turn for definite and positive information to men who have studied a problem for many years and who accordingly made painstaking research investigations; these men therefore have a definite answer.

Every milk producer has, at one time or another, wondered just how cold milk should be to preserve its high quality. It is a known fact that the number and the type of organisms contained in milk determine its keeping quality. But the three factors which determine the rapidity with which these organisms multiply are the initial number occurring or introduced in the fresh milk, the time and the temperature.

Dr. Samuel C. Prescott, head of the Department of Biology and Public Health at the Massachusetts Institute of Technology, has studied milk keeping qualities for many years. In the February, 1932, issue of Refrigerating Engineering, the article, "Bacteria as Affected by Temperature," is a definite answer to the proper temperature to which milk should be cooled by the producer. He points out that "under ideal conditions many bacteria will reproduce in as short a time as 30 minutes, or perhaps less."

Many farms are at a great distance from the central station to which their milk is shipped, and it is not unlikely that under certain conditions milk does not reach the central station until possibly 24 hours, and in some instances perhaps 30 hours,



Milk cooling unit used in experimental studies at Pennsylvania State College.

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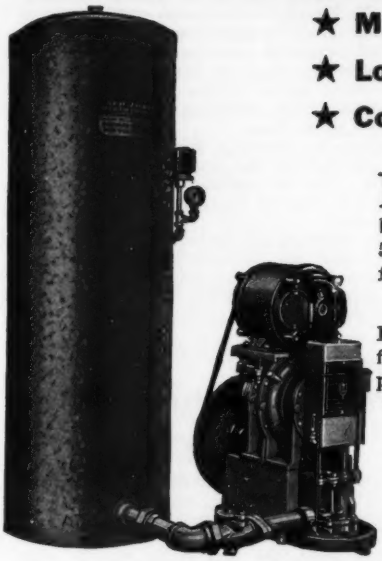

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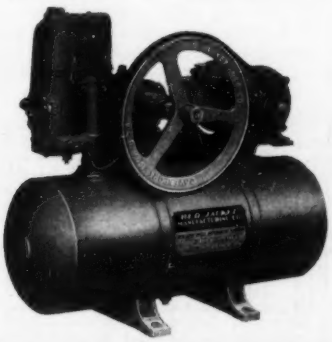

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Bacteria Multiplication in Milk for Various Temperatures.

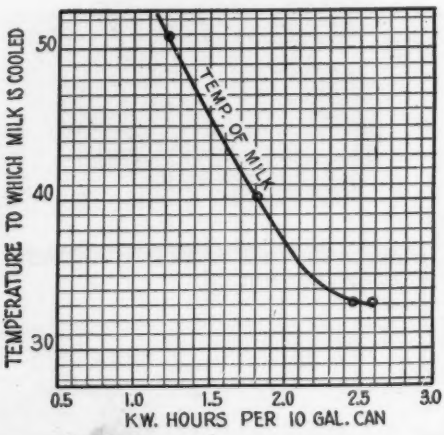
Length in Days	Temperature of Milk (deg. F.)				
	35	40	45	50	60
2nd day	5,000	4,000	12,000	60,000	27,500,000
4th day	3,000	8,000	200,000	1,000,000	900,000,000
6th day	3,500	12,000	80,000	16,000,000	1,200,000,000
9th day	1,800	8,000	40,000	360,000,000	1,750,000,000

after it has been produced. It is interesting to point out just what might happen under this condition to milk which may not have been cooled to a very low temperature. As Dr. Prescott points out, the bacteria reproduces by simple fission, whereby one cell becomes two and two becomes four and so on. Consequently, under ideal temperature condition milk which contained one microbe per cubic centimeter after 24 hours would multiply to 16,777,216, and at the end of 30 hours, 1,073,741,824 organisms. Of course, it is probable that general conditions will tend to slow down such rapid development; nevertheless they do increase.

Keeping Quality Depends on Temperature

The keeping quality of milk, all other things being equal, depends upon its temperature. There is enough experimental evidence that milk cooled to 50 degrees F. has its keeping quality greatly prolonged. Dr. Prescott states that, "It has become a general custom in the dairy industry to insist that milk shall be at once cooled to or below this temperature in order to prevent the rapid development of microbes and the changes they can bring about. With this experience in mind, it has also become a somewhat generally accepted popular idea that this temperature is adequate for most food preservation." Unfortunately, this is not the case. In support of this statement, he gives the table above which shows how rapidly bacteria multiplied in milk held at different temperatures when the initial number of organisms per cc. in inoculated milk was approximately 7,000.

There is a decrease in the number of organisms at 40 degrees F. for the first several days and then again an increase. A slight increase at 45 degrees the second day, considerable in the next succeeding days, and a falling off later. But at 50 degrees F. there is continued growing. It becomes evident that the most suitable temperature from the standpoint of bacterial growth is 45 degrees F.



Energy required to cool a ten-gallon can of milk, initial temperature being 98.6° Fahr.

Three Degrees Per Hour

Experimental studies at the Pennsylvania State College, Department of Agricultural Engineering, conclusively showed that if 10 gallons of milk cooled to 40 degrees F. is placed outside where the air temperature is approximately 70 degrees, this milk will warm up on the average at the rate of three degrees per hour, so that the can of milk originally cooled to 40 degrees F. if placed outside in a summer day, will be nearly at 50 degrees at the end of three hours.

Considering the bacterial growth, the general exposure as well as the mechanically economic aspect, it is a logical conclusion that milk should be cooled to 40 degrees F., or as near 40 as it is possible to get it.

From the bacterial standpoint alone, 45 degrees might be called the temperature at which the original bacterial content of milk will remain the same. Considering the other factors, cool your milk to 40 degrees.

What Does Water Cost?

By L. S. Caple*

There are three costs to having running water on a farm: The first cost, operating cost, and maintenance. That is, of course, figuring you already have a source of supply.

Analyzing these, the first costs depends upon the supply, whether it is a shallow well or a deep well. A good reliable shallow we pump can be purchased today for as little as $50, while the cost of a deep pump is somewhat higher.

Operating costs for electricity usually run about ¼ of what it costs your city neighbor to purchase his water through city mains. If you can estimate how many gallons you will use in a month, you can figure that it will take about 1 kilowatt-hour for each 1000 gallons pumped. The type of pump and how well it is installed help to decrease the operating costs. In other words, do not install too small a pump to do your job and do not try to save a few cents by purchasing used or too small pipe. Friction losses due to old corroded or too small pipe often more than double operating costs.

Maintenance costs naturally vary, but from my 15 years' experience as a rural service representative, I feel safe in saying that $1.00 per year is a high average cost for maintenance.

* Abstract of radio address over station WGY.

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

BREEZES ON CALL

EVERY time I went out to look at the thermometer on our side porch, the mercury was up above the 100 mark. The air was close and muggy, and so still that the leaves hung motionless even on the aspen trees behind the house. When my husband came in at night and suggested that I drive over to Macon's with him, I was glad to pile the dishes in the sink and go. Most of the family were out on the porch when we got there, the children playing, Bob reading, and Ethel mending a pair of overalls.

As I went up the steps a sudden little breeze flashed across my face from an electric fan hung on a peg near the door.

"That does feel good," I exclaimed.

"Doesn't it? agreed Ethel, pulling forward a chair. "Sit right here and you'll get the full benefit of it. This kind of a day makes you plug in all the fans you have, doesn't it?"

"All of them?" I asked. "Have you more than one? Oh, yes," as I discovered another whirling silently away on a table at the other end of the porch.

"There's another going in the baby's room, too," Ethel said. "And one on out in the kitchen where the girls are doing dishes."

"Cheap comfort," said Bob with a twinkle in his friendly brown eyes. "Nothing like a good electric fan for keeping folks cool this weather. There's a pretty close tie-in between tempers and temperature at our house. And you know how contagious a burst of temper can be; the whole family is exposed and apt to come down with it in an aggravated form. We've cut down that risk. When the temperature starts climbing and there are no breezes from heaven to help us bear it, Ethel plugs in the fans. Everybody can find a comfortable spot, and everybody is easier to get along with."

"Oh, you go on," laughed Ethel. "You are the first one to demand a fan in the bed room when it begins to get hot, and you won't sit down to a meal nowadays without one blowing a gale that nearly sweeps the food off the table."

"That just proves it," put in my husband. "Bob's weatherwise."

Summer Comfort Via Electric Fan

At any rate, it argues that the Macons have learned how much you can do for summer comfort with an electric fan. A fan does not lower the temperature of the air to be sure, nor can it take out any of the moisture on hot muggy days, but it can produce a portable breeze that will blow high or low, east or west, whichever you want. And air in motion feels cooler at least.

Household fans come in many sizes, from six to sixteen inches across the blades. They are light enough to carry easily from room to room, and built so you can change the direction or volume of the breeze by pressing a lever or pushing a button. Some of them blow always in the direction you

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face them, and at the angle you tilt the fan. Others swing around in a wide arc that sweeps a breeze around the room.

This year there are fans with rubber blades that need no guard over their face, and one new fan with a pedestal of its own. You can set it wherever you like without moving everything off the table or the desk to make room for it, and you can adjust the height as you like.

"I've become quite an adept with these fans," Ethel went on. "There's almost always somebody around who doesn't want a draft on the back of her neck, and some one else who has the jitters if the fan scatters papers or quilt pieces around the place. But with a little planning, I've learned to direct them so every one is satisfied."

"When I was in the hospital one summer, the nurse put a fan under the bed, and I do that in the baby's room these hot nights and in the afternoon

when he has his nap. It keeps the air moving and makes him comfortable without a draft."

"Better take Gail out and show her your new kitchen fan," said Bob.

"Want to see it?"

"Of course," I answered.

So we all trouped out into the kitchen where Sue and Mary had just finished up the work. There in the upper part of the east window was a metal rimmed glass that fitted across the top of the window between the casings. In the middle was a circular opening that enclosed the fan.

"We screwed it in there without changing a thing," said Ethel. "I can raise or lower the window just the same. When I pull this string the fan draws all the hot air out of the kitchen in a hurry. And all the smell of onions and the smoke of frying goes hypering out with it. I figure that the kitchen will stay clean longer if we don't let that greasy, smoky air settle on the walls and curtains. Then whenever I want to freshen up the house for my own comfort, I pull it this way and all out doors comes tumbling in."

"It's all well and good to keep these fans going to make folks comfortable," put in Ben from the doorway. "I even like to take one out to the barn when I'm milking, for the cows as well as myself, and they are fine for over heated hogs, but this morning when I came into the house to telephone, I found a fan here on the kitchen table blowing a breeze on a dish of hot jello. I thought to myself that was going a little bit too far."

"Oh, you hush your teasing," said Ethel laughing. "I often use a fan when I'm in a hurry to cool off

something I want to put in the refrigerator. And the girls are always carrying one to the bathroom or their bed room to dry their hair, or a pair of stockings, or a blouse, or some underwear they have washed out and want to iron in a hurry. You'd laugh to see the row of white shoes all freshly cleaned that lines up here under a fan some afternoons. And if you haven't tried it, you'll be surprised how much the fan speeds up the drying."

Cheap comfort and cheap convenience, as Bob said. Their biggest fan uses just 50 watts. If they kept that fan going seven hours a day for all thirty days of our hottest month, it would use just 10½ kilowatt hours. At a 5c rate that would be 52c for breezes on demand; at a 3c rate, it would be 31c.

• • •

CLINKERS

THESE are the days when bits of ice clinking against a glass make merry music in our ears, days when a tall, cold drink gets a warm welcome.

If you are stocking one corner in your refrigerator with ginger ale, grape juice, and oranges and lemons a plenty to make these drinks, you will find a jar or two of syrups helpful, too.

A sugar syrup made with equal parts of sugar and water boiled for about five minutes can be stored in a covered jar until you need it. Experts on summer drinks maintain that this syrup sweetens lemonade and iced tea better than sugar does, and that it gives body to the drink whatever it is.

When folks come to call, you can dress up most any beverage to serve with cookies or sponge cake just by adding a ladle of ice cream or a fruit ice.

Perhaps the simplest of all is frosted coffee. This takes two tablespoons of coffee syrup and a cup of milk for each glass. You make the syrup as you did the sugar syrup except that you use strong coffee instead of water, and boil ten minutes instead of five. Put the syrup, milk, and a heaping tablespoon of ice cream into a tightly covered jar.

Shake it up. Pour it into tall glasses and add another dab of ice cream as you serve it.

Ginger Ale Float is deservedly popular with the younger set. They can make it themselves if you keep a few bottles of ginger ale chilled in the refrigerator for all they have to do is add a scoop of pineapple sherbet to each glass,—sherbet from

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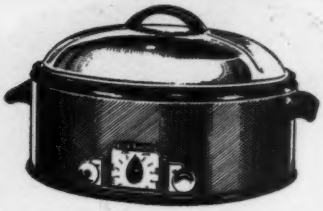

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Mrs. Norma Mitchell, Home Economics Director

THE SWARTZBAUGH MFG. CO.
Toledo, Ohio

SAVE COST OF SPRAYS!

KILL FLIES & BUGS *ELECTRICALLY!*

KILL THOSE FLIES Electrically BEFORE they get inside! It's easy to kill Flies, Insects, Beetles, etc., with the

DUROBAR
ELECTRIC SCREEN

Safe—inexpensive—foolproof—uses very little electricity. Lasts a lifetime—first cost is the last cost. Works in rainy or foggy weather. Saves the cost of sprays. Thousands of satisfied users.

It costs you nothing to find out about this sanitary, sure, modern method of destroying flies and insects outside the building. *Write today for complete information and prices.*

National Electric Screen Co.
Dept. E-F 4, 29 N. Peoria St., Chicago, Ill.

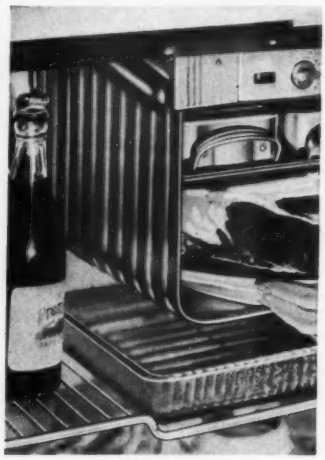
FRUITGROWERS and GARDENERS ***Write for free information on how to get a perfect crop without the use of sprays.***

the drug store or from one of the trays of your electric refrigerator. You might give them a hint, though, that it looks even more inviting if they will garnish each glass with a sprig of mint.

Here is another ginger ale combination that is sure to prove attractive to folks with a thirst. Miss Edna Sparkman, Home Economist in the laboratory of one of the refrigerator companies, calls it Summer Fizz.

12 sprigs mint
1 cup curant jelly
1 cup cold water
1 cup hot water
½ cup lemon juice
3 cups orange juice
1 quart ginger ale

Crush mint in a bowl with the back of a silver spoon, add boiling water, then a glass of currant



jelly. When jell is melted, cool. Then strain out crushed mint. Add the fruit juice and just before serving, the ginger ale. It is nice to serve this with a sprig of fresh mint or to pour it over ice cubes which have had mint leaves frozen in them.

A Wiring Guide for Farmers

A much needed book is just off the press, the "Farmers Wiring Guide." It deals with the specific requirements of a farm home, and explains how a farm wiring job may be made economical, safe, adequate and convenient. The authors are men of high standing in the electrical field, and who, for years, have specialized in farm electrical service.

Some of the chapter headings are: Bringing in the Current; Planning the Outlets; Wiring Materials and Methods; Lighting; Watts; Wiring for Power and Heat; After the Current Comes, etc. The book is well illustrated with pictures and diagrams, and is written in simple, non-technical language. It is published by the publishers of ELECTRICITY ON THE FARM, 24 West 40th St., New York City.

Interested persons may obtain a copy of this book through their local power company, or by sending 10 cents direct to the publishers.

ON THE AIR

Conducted by JEROME J. HENRY

Searching for Ghosts Is Amusing

SEARCHING for ghosts, eerie business that it is, is not without its amusing aspects. Sponsors of the Crime Clues program, heard every week over NBC stations, discovered that when they advertised for a haunted house for a recent broadcast.

One woman claimed her house was legitimately spooky; in fact, she said, the spirits were 90 per cent proof. She was right. A few years ago Federal agents found four 2,500 gallon stills in the cellar.

A man who called himself only Spirit Guide,

Comparatively unknown a year ago, Jerry Cooper is now considered one of the radio "finds" of 1935. This is his newest portrait. You can hear him sing in several CBS programs.

warned against hounding the phantoms. It's sacrilege will only result in catastrophe, he cautioned. Just the same, he added, he'd be glad to help out,—for a reasonable fee.

Then there was the woman who volunteered to produce the ghosts associated with any haunted house. She had a special technique. She would go into a seance and contact Sir Arthur Conan Doyle. They would have an understanding of sorts, and the ghosts would appear as per schedule. (There was a small fee.)

A psycho-metric showed up at the historical Conference House on Staten Island, where the broadcast finally went on, to show his stuff. He looked at the skeleton in the cellar and guessed whose bones they were.

If any ghosts were hovering inarticulately over the microphone that evening they probably laughed up their spectral sleeves. Mortals haven't a ghost of a chance.

• • •

Thousand Melodies a Year on Barn Dance

THOUGH real hay lofts may fill to overflowing with hay this summer, farm folk will still enjoy a liberal share of barn dance tunes brought to

Get the
FULL BENEFITS
from your
Electrical
Service

FREE FACT MANUAL

SHOWS HOW!

Whether you need more electrical outlets in your home, wiring extensions to your yard or barns or a complete electrification of both your home and farm, you'll save money by sending the coupon for a Free Copy of the New Fact Manual of Porcelain Knob and Tube Wiring.

Ninety per cent of all farms are wired with this most economical, safe and permanent wiring system. The complete details are given in the Fact Manual together with an installation diagram which shows how easily and quickly this wiring system can be installed. Mail the coupon now—there is no obligation.

SEND MONEY SAVING FACT MANUAL which shows how I can secure More Electrical Conveniences at Low Cost.
(*Print Name and Address in Page Margin*)

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PORCELAIN
MANUFACTURERS
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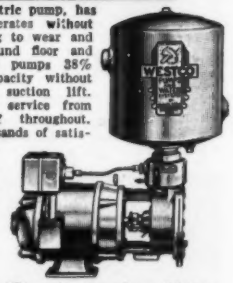
THIS ELECTRIC PUMP HAS ONLY ONE MOVING PART!

NO Bells NO Valves NO Pistons NO Pounding Hammers

WESTCO—world's simplest electric pump, has only ONE moving part. Operates without metal-to-metal contact. Nothing to wear and get out of order. ● To ground floor and basement faucets, a WESTCO pumps 38% more water than its rated capacity without using extra current. 28-ft. suction lift. Bronze Liners assure lifetime service from pump casings. ● Rust-proof throughout. Quiet. Cheap to operate. Thousands of satisfied users. MONEY - BACK GUARANTEE. ● Mail coupon below for FREE colorful Catalog. MICRO - WESTCO, Inc., Bettendorf, Iowa. Dealers from coast to coast.



Westco Pumps and Water Systems

375 gals. per hour Westco. Others up to 3000 gals. per hour. Larger tanks available.

COUPON BRINGS CATALOG

MICRO-WESTCO, Inc., Bettendorf, Iowa. Dept. E-8. *Without obligation, please send me FREE Westco Catalog.*

Name .....

Address .....

City ..... State .....

them by radio. And speaking of barn dances, one comes to mind immediately. Its the famous WLS Barn Dance, more recently brought to listeners over the entire country through NBC stations.

The program features old time songs and popular ballads of days gone by. It requires more than 1,000 songs each year and presents a real problem to music librarians. About 20 numbers are used each Saturday night. A genuine effort is made to avoid repetition necessitating many hours of search for suitable scores.

During the 10-year history of the barn dance, a large library of old time folk songs, "hill billy"

Jessica Dragonette. This is a new picture of one of radio's most popular singers.

tunes and western favorites has been built up. Even this wealth of material, however, is found to be insufficient at times.

Recently a new source has been developed in the collection of old music owned by Alfred Goldman, a Chicagoan who has been making it a hobby for more than 20 years. Goldman some time ago placed his library at the disposal of the producers of the barn dance, thereby simplifying the task of making selections. Fan mail indicates that the program is successfully accomplishing its purpose of recalling to the minds of its listeners the days and events of the past.

Listening Helps in Learning Music

TO learn music, listen to it. To appreciate good music, listen to it.

This is the suggestion of Morgan L. Eastman, famous radio conductor with many years of experience in several musical lines. Eastman takes issue with those who assert there will be a dearth of able musicians in the future due to the ease with which people may hear the finest music in their homes by radio, thereby removing the incentive for widespread study and cultivation of talents.

I do not wish to underestimate the importance of teaching by regular instructors, Eastman points out, but I feel that the opportunity afforded by radio to the serious student for comparing his work and progress with a high standard of perfection by listening to great artists has immeasurably widened the path to genuine success.

This is an added consideration to that involved in the inspiration which must come to talented persons when by a turn of the dial they can bring the world's greatest music into their own homes, says Eastman. I think we can look forward to the development of a much greater number of better musicians in the future.

• • •

Making Big Ben Ring True

REPRODUCING the deep mellow clang of the chimes of Big Ben in London will no longer be a problem to radio engineers. The problem has been solved by inventing chimes which did not sound like those of the famous clock.

This sounds like a believe-it-or-not sort of a story, but there are many tricks to reproducing sounds over the microphone. Ray Kelley, NBC sound effects chief, found that the chimes of Big Ben, as exactly reproduced on a phonograph record, did not sound right over the radio. There were too many overtones and echoes.

Kelley tried studio chimes, using exactly the same pitch as the clock. Once again the sound was unsuccessful. At last he hit on the idea. He got chimes which were just a shade different from Big Ben's deep note. Then he used an electrical hookup, amplifying the sound before it went into the microphone. The idea worked so now Kelley proudly boasts that his electric Big Ben will fool even a native Londoner who lives within hearing of the bells.

GRIND ELECTRICALLY

Grind Feed with an Electrically Driven W-W

With your low-cost electric power and a W-W Hammer Grinder you can grind and mix everything — from the heaviest roughage to small grains. Hard-to-chew stalks and stems, fodder, bundle feeds, maize heads, ear corn with shuck, etc., can be quickly converted into nutritious feed with the W-W.

Write for Full Details

Tell us what you have to grind, and how much. We'll make recommendations, send you illustrated material and prices—no obligation of course.

W-W FEED GRINDER CORP.
Wichita Kansas

GET NEW 3-COLOR CATALOG

—gives full details of Blizzard Success with

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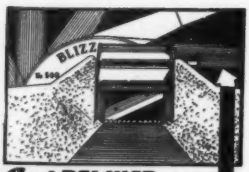
also "12 Reasons Why Blizzard Excels." Write today.



Fill Silos or Chop Hay the Blizzard Way

***And* DELIVER IT WHERE YOU PLEASE!**

Any Angle . .

2 JOBS — 1 MACHINE. Hay chopping first — silo filling later — both done most efficiently with the NEW BLIZZARD. Not a nut or bolt need be changed. Marvelous! Speedy! Write for Catalog today!

BLIZZARD MFG. CO., Box 12, Canton, Ohio

Questions and Answers

Conducted by R. U. BLASINGAME

Can Two Motors Be Connected?

Question: I would appreciate receiving information in connection with the following. Can two ¼ D.C. 32 volt motors be connected together to make a half horse power motor, and if so, how can this be done?

K. D.

Answer: There is no way that I know of to connect these motors so that each is carrying equal portions of the load. I feel this would be a very inefficient set-up.

Hydro Electric Plant Installation

Question: *Am considering purchasing a farm in the near future in a district where electricity is not available, but quite a few locations have running water. So I would like to know something about how large a volume of water and how much fall would be required to operate a 5 k.w. generator to run continuously and be automatically controlled as to various loads?*

Also approximate cost of installation and method of installing.

M. J. K.

Answer: I believe that you will find that the installation of a hydro electric plant will be rather expensive. If you can secure high line current from a power company, I feel that you will have better electric service than by attempting to produce your own light, heat and power.

Following is a list of some of the manufacturers of hydro electric equipment with which I am acquainted:

S. Morgan Smith, York, Penna.
M. Trump Co., Springfield, Ohio
Fitz Water Wheel Co., Hanover, Pa.
Pelton Water Wheel Co., New York City
The James Laffel Co., Springfield, Ohio

If you will drop each one a postal card they will send you their catalogs on request.

Electric Fence Equipment

Question: As the commercial devices are comparatively high priced, I wish to make an appli-

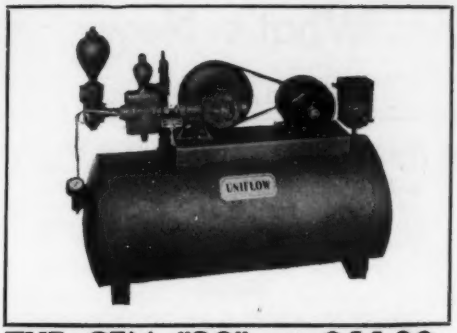
(*Continued on page 30*)

IRRIGATE with OOZO POROUS HOSE

OOZO does a better job with less water • Water flows gently through pores of hose into ground • Used in orchard, field or garden • Approved by well-known Agricultural Colleges, Irrigation Engineers, etc. • Money refunded after 5 days trial if not satisfactory.

Send for complete FREE information— No obligation.

OOZO, INC., HOWELL, MICH.



THE GEM "30" at $64.00

is a complete shallow well system that features quiet operation. Mounted on rubber—all you can hear is the swish of the water. It is one of the finest, most compact and completely equipped water systems that we make.

Low price—easy financing—small operating cost make it easy to own. Write for complete catalogs today.

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Water Systems
Cellar Drainers
Milk Coolers
Refrigerators
&
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SEPTIC TANKS

1503 EAST LAKE ROAD
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ERIE PENNSYLVANIA

THRESHERS

SMALL SIZES

FOR RURAL ELECTRIC LINES

3 to 5 h.p. required.

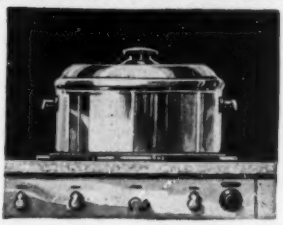
Write for Catalog.

MESSINGER MFG. CO. .. TATAMY, PENNA.
Threshers - Dusters - Corn Shellers

Fit your electric range with new CHROMALOX

Super-speed ELECTRIC RANGE BURNERS

A revelation in fast cooking. Immunity to damage, economy, long service life. Standard in many highest grade modern ranges. Ask your power company, electrical dealer, or write us.



Edwin L. Wiegand Co. 7580 Thomas Blvd. Pittsburgh, Pa.

ASK YOUR POWER COMPANY for a DEMONSTRATION

What's New

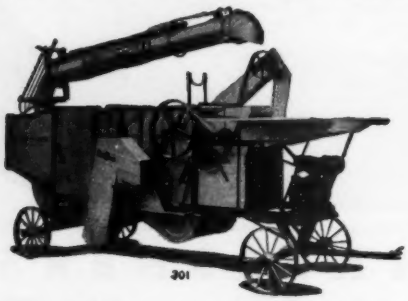
Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Thresher

Another farm operation can now be done electrically, with the development of an electric motor driven thresher by an old-time Pennsylvania farm equipment manufacturer.

The design and construction of this equipment is such that the power requirements are small, according to the manufacturer. The model shown requires only a 3 HP motor to operate thresher,



separator and cleaner; with double bagger, tailings, elevator and straw carrier a 4 HP motor is required.

These threshers do satisfactory work on all types of grain such as wheat, rye, oats, barley, rice, hegari as well as peas and beans and all kinds of seed such as timothy, clover and alfalfa.

Multiple Fuse

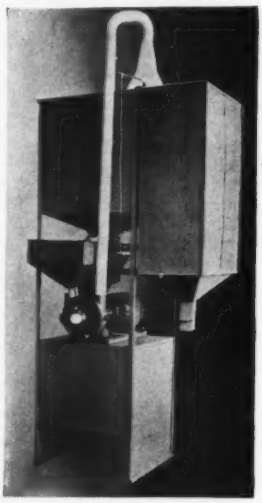
Hunting a blown fuse always is an irritating task but particularly so at night when it is difficult to locate it in the darkness. Frequently there is no extra fuse available so that the circuit protected by the blown fuse must be "cold" until another fuse is obtained.

A new fuse which eliminates both of the above difficulties has recently been developed by an eastern manufacturer. A bright neon light glows in the fuse when it is blown indicating the particular one which has been overloaded. A slight turn

of the knob on the fuse again energizes the circuit by engaging a new fuse link, of which there are six in the fuse. A permanent overload or short circuit will be detected after the knob has been turned because the neon light will glow again.

Buhr-Type Feed Grinder

Grinding certain grains, when fed to livestock, has been established as economical by experiment stations. The practice of grinding has been established for many years but the optimum fineness to which a grain should be ground for any certain class of animals has been established only in recent years. Similarly, the use of electric power for driving feed grinders has become established in recent years.



The development of a new small buhr-type feed grinder was recently completed by a manufacturer of feed grinders. It is reported, after tests at a Mid-western university, to have its greatest efficiency when driven by a 1-horsepower motor at 1750 r.p.m. A blower fan is used to elevate the grain to an overhead bin after grinding. The mill is usually operated by allowing the grain to flow into it by gravity, rate of flow being controlled by a regulating slide.

CLASSIFIED ADVERTISING

LYON FLY ELECTROCUTORS kill disease-carrying pests the easiest way. A Lyon electrocutor can kill thousands of flies daily at a cost of a cent or two. Cheaper than spraying. Built for long service. Fireproof and waterproof. Send for FREE catalog describing money-saving brooders, alarms, electric material for homemade equipment. Lyon service will save you time and money. LYON ELECTRIC CO., Dept. E. F., San Diego, Calif.

SAFE, SANITARY ELECTRIC LAMP KILLS INSECTS AUTOMATICALLY without bait or cost where light is needed. Amazing results in garden, farm, lawn, business house, home, etc. Lifetime service. Price $2.75 up. Literature free. SAUER BROS., MFRS., 5226 E. 12th St., Oakland, Calif.

Questions and Answers

(*Continued from page 29*)

ance for adapting 110 volt A.C. current for use in electrifying a fence. In making such an appliance, is 110 volt current reduced to a safe value by resistance, to prevent danger to live stock, or is it advisable to use a transformer?

R. L. K.

Answer: By no means should one attempt to construct his own electric fencing equipment. The commercial equipment uses a resistance coil and a circuit make and break device.

COVER TITLE CONTEST

JUNE COVER

RULES
August Title Contest

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash, and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles should be brief — the shorter the better.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before September 1st.

Winning names and titles will be announced in the October issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

$20 First Prize for June Contest

"Little Daughter trying to see the wonders of electricity."

MRS. FLORENCE HALFEN, Brandywine Summit, Pa.

Nine $2.00 Prizes for June

"The electric current brings bubble bubble without toil or trouble."
LOLA V. WATERMAN, R.F.D. 1, Sabattus, Maine

"No more need of scorching fires,
When food is cooked on electric wires."
DOROTHY JACOBY, R.F.D. 1, Clarks Summit, Pa.

"Electric cooking brings quick 'es-steam'."
MRS. JOHN S. DUNNING, Notch Road, Granby, Conn.

"Looking into electric cooking."
ANNA M. MILLER, R.F.D. 2, New Carlisle, Ohio

"Keep up with 'current' times by cooking with electricity."
MRS. BEACH CRAIGMYLE, Bedford, Ky.

"Electrically boiling vegetables at a low degree,
No wasting of vitamines C and D."
KATHRYN B. LEMAN, R.F.D. 1, Box 114, Eureka, Ill.

"No drudge, no smudge, cooking the electrical way."
MRS. C. B. SCOTT, R.F.D. 4, Box 247, Terre Haute, Ind.

"Mother's smile and daughter's gaze.
A sure sign electricity pays."
MRS. M. E. EIB, R.F.D. 2, Elwood, Ill.

"Electricity reduces the kitchen miles
And increases the modern cook's smiles."
MRS. V. PARTENHEIMER, R.F.D. 7, North St. Paul, Minn.

My title for the Front Cover picture on ELECTRICITY ON THE FARM for August is

.....

.....

(a) What chores and housekeeping jobs on your farm would you like to have electricity make easier?

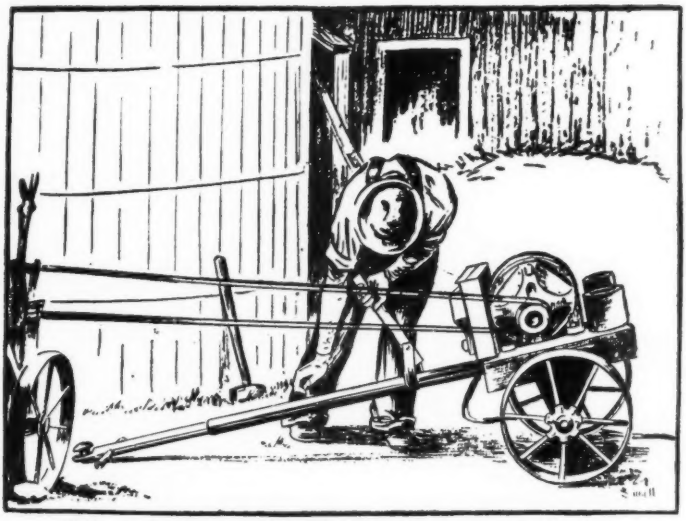
.....

.....

My name is..... *R.F.D.*.....

Post Office.....*County*.....*State*..... 8-36

WHAT IS YOUR POWER PROBLEM?
AN Electric Motor will SOLVE IT!



With an electric motor, silo filling becomes a one-man job—done at one-fifth the usual "man-power" cost—and without waiting for the traveling silo-filling gang.

Do you use a feed grinder, a hay hoist, a corn sheller—or have a work shop? An electric motor will operate this equipment. Inquire as to how easily the change from your present method to electric motor power can be made.

Engineers of West Penn's Agricultural Service Division will be glad to help you solve your individual power problems—so that your work will be done efficiently and at the lowest cost. This engineering service is maintained by West Penn for your convenience. There is no obligation.

CLIP AND MAIL TODAY

WEST PENN POWER COMPANY, Agricultural Service Division
Pittsburgh, Pa.

Gentlemen: I am interested in an Electric Motor for:

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(Name the Equipment)

YOUR NAME .....

ROUTE AND NO. .....

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